UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/814,183	04/01/2004	Takehiro Yoshida	2004_0504A	6452

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EXAMINER
KANG, INSUN

ART UNIT	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _04 August 2008_.
2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.
3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-3 and 10-12_ is/are pending in the application.
    4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5)☐ Claim(s) _____ is/are allowed.
6)☒ Claim(s) _1-3 and 10-12_ is/are rejected.
7)☐ Claim(s) _____ is/are objected to.
8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.
10)☒ The drawing(s) filed on _04 August 2008_ is/are: a)☐ accepted or b)☒ objected to by the Examiner.
    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    a)☐ All b)☐ Some * c)☐ None of:
        1.☐ Certified copies of the priority documents have been received.
        2.☐ Certified copies of the priority documents have been received in Application No. _____.
        3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
       Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
       Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1.   This action is in response to the RCE amendment filed on 8/4/2008.

2.   Claims 1-3 and 10-12 are pending in the application.

Drawings

3.   New corrected drawings in compliance with 37 CFR 1.121(d) are required in this application because informal drawings are filed on 8/4/2008. Applicant is advised to employ the services of a competent patent draftsperson outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings. The corrected drawings are required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

4.   The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: Fig. A-D, 0062. The specification does not describe these figures Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

5.   The disclosure is objected to because of the following informalities: The brief description

of drawings section in the specification do not have description of Fig. A-D.

    Appropriate correction is required.

Claim Rejections - 35 USC § 103

6.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

7.   Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishiwata (US

Pub.No. 2002/0016957 published on 2/7/2002), in view of Hsieh (US Patent 7,093,241), and

further in view of Merrick et al. (US 6,339,841) hereafter Merrick.

    Per claim 1:

    Ishiwata discloses:

-   A program linking program recorded on a storage medium for causing a computer

    having a memory to function at least as: linking means for linking a plurality of

    unlinked programs to form a pre-linked program for advancing toward the

    completion of a linked program (i.e. "A linker starting station 12 starts a liner 17

    based on the linking order held by the linking order section 11a and causes it to

    execute the linking process, and thus an executable object 18 is formed," page 4,

    0086)

- storage means for storing the pre-linked program in memory before completion of the linked program (i.e. "the storing section 14 stores the minimum program size out of the formed executable objects 18 by repeating respective steps by a repeating section 15," page 4, 0090 where the storing step is repeated, it is considered to be performed both before and after completion of each linking);

- and, management means for causing the linking means to preferentially perform linking of the plural unlinked programs to form the pre-linked program, in predetermined priority order (i.e. "The linking order forming section 51 is a unit that forms the linking order of the intermediate objects 56," page 7, 0161; "the minimum program size and the linking order of the intermediate objects 56 used when the executable object 58 having this minimum program size is obtained are stored in the storing section 54," page 7, 0165).

Ishiwata discloses obtaining the minimum program size by the linker order forming section but does not explicitly teach ensuring linking in a predetermined priority order such that cumulative sum of sizes of the unlinked programs is within a range in which overflow of a predetermined capacity of the memory does not occur. However, Hsieh teaches such a buffer overflow check was known in the pertinent art, at the time applicant's invention was made, to ensure sufficient memory space to accommodate data storage (i.e. col. 1 lines 63-67). It would have been obvious for one having ordinary skill in the art to modify Ishiwata's disclosed system to incorporate the teachings of Hsieh. The modification would be obvious because one having ordinary skill in the art would be motivated to perform a memory boundary check to prevent buffer overflow that can cause potential memory fault or malicious memory exploitation.

Ishiwata further discloses:

-the predetermined priority order of decreasing order of time for linking each of the

plurality of unlinked programs upon execution (i.e. "based on one genes of a predetermined

number are formed first by the linking order forming section 11 to get the executable object

18…the program size of the executable object 18…the minimum value…of the program size,"

page 5, 0124-0126). Ishiwata does not explicitly teach an increasing order of frequency of use of

each of the plurality of unlinked programs to create the pre-linked program. However, Merrick

teaches it was known in the pertinent art, at the time applicant's invention was made, to increase

speed of operation and reduce the memory needs (col. 1 lines 45-50). It would have been

obvious for one having ordinary skill in the art to modify Ishiwata and Hsieh's disclosed system

to incorporate the teachings of Merrick. The modification would be obvious because one having

ordinary skill in the art would be motivated to provide faster operation speed and reduction in the

memory needed by linking only those programs that are actually referenced (col. 1 lines 55-62).

Per claim 2:

Ishiwata further discloses:

- wherein the management means causes the linking means to perform linking, and

  as a result determine cumulative sum of sizes of the unlinked programs(i.e. "The

  linking order forming section 51 is a unit that forms the linking order of the

  intermediate objects 56," page 7, 0161; "the minimum program size and the

  linking order of the intermediate objects 56 used when the executable object 58

  having this minimum program size is obtained are stored in the storing section

  54," page 7, 0165).

Per claim 3:

Ishiwata further discloses:

- wherein the management means determines the cumulative sum of sizes of the
  unlinked programs by evaluating the size of each of the plurality of linked
  programs at each stage of linking without causing the linking means to perform
  linking (i.e. "a comparing step which compares program size of the executable
  objects obtained by the linking processing step with the program size of a
  executable objects stored in a storing section every time when the liking order is
  changed," page 1, 0014).

Per claim 10, it is the method version of claim 1, respectively, and is rejected for the
same reasons set forth in connection with the rejection of claim 1 above.

8.   Claims 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over
Ishiwata (US Pub.No. 2002/0016957 published on 2/7/2002) in view of Hsieh (US Patent
7,093,241).

Per claim 11:

Ishiwata discloses:

- linking means for linking a plurality of unlinked programs to form a pre-linked
  program for advancing toward the completion of a linked program (i.e. "A linker
  starting station 12 starts a liner 17 based on the linking order held by the linking

order section 11a and causes it to execute the linking process, and thus an

executable object 18 is formed," page 4, 0086)

- storage means for storing the pre-linked program in memory before completion of

  the linked program (i.e. "the storing section 14 stores the minimum program size

  out of the formed executable objects 18 by repeating respective steps by a

  repeating section 15," page 4, 0090 where the storing step is repeated, it is

  considered to be performed both before and after completion of each linking);

- and, management means for causing the linking means to preferentially perform

  linking of the plural unlinked programs to form the pre-linked program, in

  predetermined priority order (i.e. "The linking order forming section 51 is a unit

  that forms the linking order of the intermediate objects 56," page 7, 0161; "the

  minimum program size and the linking order of the intermediate objects 56 used

  when the executable object 58 having this minimum program size is obtained are

  stored in the storing section 54," page 7, 0165).

Ishiwata discloses obtaining the minimum program size by the linker order forming

section but does not explicitly teach ensuring linking in a predetermined priority order such that

cumulative sum of sizes of the unlinked programs is within a range in which overflow of a

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overflow check was known in the pertinent art, at the time applicant's invention was made, to

ensure sufficient memory space to accommodate data storage (i.e. col. 1 lines 63-67). It would

have been obvious for one having ordinary skill in the art to modify Ishiwata's disclosed system

to incorporate the teachings of Hsieh. The modification would be obvious because one having

ordinary skill in the art would be motivated to perform a memory boundary check to prevent

buffer overflow that can cause potential memory fault or malicious memory exploitation.

Ishiwata further discloses:

-the predetermined priority order is a decreasing order of time for linking each of the

plurality of unlinked programs upon execution (i.e. "based on one genes of a predetermined

number are formed first by the linking order forming section 11 to get the executable object

18...the program size of the executable object 18...the minimum value...of the program size,"

page 5, 0124-0126).

Per claim 12, it is the method version of claim 1, respectively, and is rejected for the

same reasons set forth in connection with the rejection of claim 1 above.

Response to Arguments

9.   Applicant's arguments with respect to claims 1-3 and 10-12 have been considered but are

moot in view of the new ground(s) of rejection.

10.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to INSUN KANG whose telephone number is (571)272-3724. The

examiner can normally be reached on M-R 7:30-6 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Lewis A. Bullock, Jr. can be reached on 571-272-3759. The fax phone number for

the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would

like assistance from a USPTO Customer Service Representative or access to the automated

information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Insun Kang/
Examiner, Art Unit 2193